



**COVID-19 (nCorona) Virus Outbreak Control and Prevention State Cell  
Health & Family Welfare Department  
Government of Kerala**

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**ADVISORY ON COVID-19 SENTINEL SURVEILLANCE ACTIVITY USING RT-PCR  
No.31/F2/2020/Health-1 - 14<sup>th</sup> May 2020**

**BACKGROUND**

The epidemiological, clinical and virologic characteristics of COVID-19 are still emerging and significant gaps remain which need to be explored for the effective preventive and control measures. The State of Kerala has taken meticulous steps to prevent and contain the disease from its very early phase. The measures include ensuring strict home quarantine for eligible, rigorous surveillance activities, testing of all eligible persons, high quality care to confirmed cases, proactive care to elderly and vulnerable individuals and promoting social distancing, respiratory and hand hygiene in community. Along with this, state has built sentinel surveillance system to detect evidence of any community transmission in the State.

With the inflow of expatriates, the state has decided to further strengthen the sentinel surveillance system which will also help in providing early warning signals and epidemiological information about the next phase of the pandemic in the state. The epidemiological gaps shall be filled by undertaking epidemiological studies on confirmed cases identified through surveillance. RTPCR will be used for surveillance till ICMR approved validated antibody test kits are available.

**OBJECTIVES**

To detect community transmission of COVID-19 in Kerala.

**METHOD**

The method adopted is sentinel surveillance.

**The population** identified for sentinel surveillance is divided into groups based on potential risk exposure. Vulnerable and special groups have also been identified. The details of the groups are given in **table.1**.

**Group-1:** Patients coming from the general population with **Acute Respiratory Infection (ARI)**, but **not a COVID suspect**.

**Group-2: Health Care Workers (HCW)** like Doctors, Nurses and paramedical staff who are involved in patient care in **Non-COVID hospitals** (Government or Private- In Out Patient Departments or Casualty services). **It is preferable to select symptomatic health care workers.** If there are no symptomatic HCWs, then asymptomatic HCWs can be taken.

**Group-3:** Persons with **high social exposure** are eligible for selection in this group. They include:

- 3.a- Food delivery persons
- 3.b- Community volunteers for COVID control (ASHA, LSGD volunteers etc)
- 3.c- Police personnel involved in field in COVID control
- 3.d- Field staff of Health Department (JHI, JPHN etc)
- 3.e- Media Personnel in the field
- 3.f- Provisions/ ration shop vendors
- 3.h Vegetable or fruit vendors.

**Group-4: Natives of Kerala** without travel history who come in close contact with **Interstate Truck Drivers**. These could be:

- 4.a- Head load workers
- 4.b- Vendors in in the market
- 4.c- Street vendors
- 4.d- Warehouse- in- charges
- 4.e- People at Vehicle Transit Camps (cleaners, repairmen, tea sellers etc)
- 4.f- FSW and MSM.

**Group-5: Guest workers** residing in Kerala.

**Group-6: Epidemiological Samples** - These include samples from specific group of people as per recommendations by the epidemiological investigation team from time to time.

**Group-7: Samples of Asymptomatic Expatriates:** These include samples of people who arrived in Kerala after May 4<sup>th</sup> 2020 from outside country / state. The sample are to be taken between 5<sup>th</sup> and 14<sup>th</sup> day of arrival in Kerala.

Preference need to be given as follows:

- a) Passengers who are not direct or high-risk contacts but travelled in aeroplane/ship cabin /train compartment along with an individual who turned positive on testing (40% of the samples)
- b) Person with travel history from red zone districts outside the state (40% of the samples)



- c) Persons with travel history outside Kerala not belonging to above categories (20% of the samples)

The setting for **Groups 1&2** is in **Non-COVID Hospital settings**.

**Table. 1. Groups Identified for Sentinel Surveillance.**

Group number	Description:	Setting	Symptom status	Samples/ Week in state
1	Patients in general population with <b>Acute Respiratory Infection (ARI)</b> but <b>NOT</b> a COVID suspect	Non-COVID Hospital	Symptomatic*	300
2	Health Care Workers in <b>Non-COVID</b> settings**	Non-COVID Hospital	Symptomatic* or Asymptomatic	300
3	Persons with high <b>social exposure**</b>	Community	Symptomatic* or Asymptomatic	400
4	People with high probability of contact with <b>Interstate Truck drivers**</b>	Community	Symptomatic* or asymptomatic	200
5	<b>Guest workers**</b>	Community	Symptomatic* or Asymptomatic	200
6	<b>Epidemiological Samples**</b>	Community/ Hospitals	Symptomatic* or Asymptomatic	200
7	Samples of <b>Asymptomatic Expatriates</b>	Community/	Asymptomatic	1400

		COVID Care Centres		
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**\*From all symptomatic persons, sample need to be collected within 7 days of onset of symptoms.**

**\*\*Samples from symptomatic persons are preferred to asymptomatic persons**

### **Selection of samples**

- Number of samples to be collected in Gr 1-6 per district per week will be proportionate to the number of active cases. The details of samples to be collected from each district will vary from time to time and will be intimated every two weeks.
- List of LSGs from where samples need to be collected shall be shared in a predetermined manner for Group 1-3. LSGs will be selected based on (1) LSGs with maximum active cases (50%), (2) LSGs with maximum people under quarantine (30%), (3) LSGs with cases in the past & High proportion of elderly (10%), (4) LSGs without any active cases & with high proportion of elderly (10%). The details will be shared every two weeks from the state.
- DSO may decide on the site for Group 4. These could be markets/ halting stations of trucks/ Targeted Groups under KSACS.
- DSO may decide on the camp site for Group 5 (Guest workers). A maximum of 10 samples shall be collected per campsite per day.
- Samples required for Group 6- Epidemiological samples shall be informed to DSOs based on feedbacks from investigators conducting epidemiological studies.
- Samples for Group 7 may be allotted proportionate to the number of expatriates/people with recent travel history in each district.

**Days of Sample Collection:** Sample in Group Numbers 1-6 will be collected on Tuesday, Thursday, Saturday where as Samples in Group 7 will be collected on Monday, Wednesday and Friday.

**Sample Collection Team:** The DSO shall constitute a sample collection team consisting of Medical Officer (1), Nurse/Laboratory technician (1) and Driver (1) for the process of sample collection. The team shall be provided mobility support and PPE kits for the purpose of sample collection. The route map for each day's sampling site should be identified and visited accordingly. Prior intimation should be provided to the sampling sites. DSO can customise the sample collection plan suited to the local settings. Sample collection sites of group 1-6 shall not be the same for sample collection site for people in Group 7.



**Sample collection: Follow advisory for pooled sample collection for sentinel surveillance samples (Groups 1-7).**

Nasopharyngeal or Oropharyngeal swabs have to be collected from the subjects in each group and sent for testing using RT-PCR in the designated laboratory. All infection prevention measures should be taken. PPE should be worn during the process of sample collection. The samples have to be collected using the procedure as per the existing guidelines. The samples collected in Modified Viral Transport Media (mVTM) are to be packed separately

**Sample ID:** The sample ID shall be given as per the following:

SAMPLE ID NO: \_\_\_\_/ \_\_\_\_ /\_\_\_\_ (DISTRICT /DATE/SAMPLE NO.)

(example KSG/12.05.20/001) The same sample ID should be written on the mVTM as well as on the surveillance form in annesure-1

The surveillance form to be filled is given in **annexure-1**. No entries in the form should be left empty.

**Labelling of mVTM**

The team shall collect the person's/patient details as per the surveillance form (annesure-1). The VTM shall be labelled as "**Pooled SS Gr- ....**" along with the other details routinely written (example for epidemiological samples the label should be "pooled SS- Gr-6" and for expatriates' group "pooled SS Gr-7"). The DSO shall ensure that the samples collected as part of Surveillance are clearly labelled as "**Pooled SS GR- ....**" and sent with a filled copy of the surveillance form to the laboratory.

The allocation of laboratories to various districts are as per the existing guidelines for sending RT-PCR samples (annexure-2).

**Special Instructions:**

Arrangements need to be done in such a way that sentinel samples should reach the laboratory within **7 hours** of the collection of the first sample.

The samples have to be collected strictly as per instructions. No other samples should be labelled as "pooled SS Gr-" without obtaining prior permission from the state. The DSO shall ensure that adherence to the guidelines are being followed.

**Processing of sentinel samples at Laboratories:** The laboratories shall adhere to the advisory for pooled samples testing issued 12<sup>th</sup> May 2020. The laboratory shall preferably pool samples from the same groups. **Group-7** samples shall **NOT** be pooled with any other groups under any circumstances.

**Results and follow up:** The report of the tests done shall be provided through the state COVID control room by the laboratories. The DSO also can login on the digital platform <https://healthmon.kerala.gov.in/rapidtest/> and view the results of the samples real time.

The follow up action (isolation, contact tracing, admission, treatment and discharge) shall be as per the existing guidelines.



**Principal Secretary**



**Annexure 1:****Government of Kerala****COVID-19 SENTINEL SURVEILLANCE ACTIVITY USING RT PCR**

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SAMPLE ID NO: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ (DISTRICT / DATE / SAMPLE NO.)

Name:		
Age:		Gender: Male/ Female/ Other
Address		
District		Phone Number:
Name of LSG		

1. Is the subject Symptomatic? YES / NO

2. If Symptomatic; data of onset of first symptoms: \_\_\_\_/\_\_\_\_/\_\_\_\_

3. Which Out of the SEVEN groups the sample belongs to? (Please CIRCLE the relevant box and sub section)

Gr -1	Patients in general population with Acute Respiratory Infection (ARI)	-
Gr- 2	Health Care Workers in Non-COVID settings	a. Hospitals (Doctors, Nurses, Paramedics etc) b. General Practitioners c. Ambulance Drivers d. Others
Gr- 3	Persons with high social exposure	a. Food delivery persons b. Community Volunteers (ASHA, LSG volunteer) c. Provisions shop vendors d. Ration Shop e. wholesale fruits or vegetable vendors f. Police Personnel g. Media Personnel h. Health Staff at Field (JHI, JPHN etc)
Gr- 4	Natives of Kerala who came in close contact with Truck Drivers arriving from outside state	a. Head load workers b. Vendors in market places c. Street vendors d. Warehouse- in- charges e. People at Vehicle Transit Camps (no travel history) f. FSW& MSM
Gr- 5	Guest workers	-
Gr- 6	Epidemiological Samples	-

<b>Gr- 7</b>	Samples from Expatriates/ People with Travel history outside state in last 14 days.	a) Passengers travelled in aeroplane/ship cabin/train b) Person with travel history from red zone districts (outside Kerala) c) Persons with travel history outside Kerala not belonging to above two sub-categories
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Name of Medical Officer:

Mobile Phone Number:



**Annexure 2: District – Lab MATRIX**

<b>District</b>	<b>Routine Samples</b>	<b>Sentinel Surveillance Samples</b>
Thiruvananthapuram	GMC Thiruvananthapuram & SCTIIMST	GMC Thiruvananthapuram
Kollam	RGCB, Thiruvananthapuram	RGCB, Thiruvananthapuram
Pathanamthitta	SPHL Thiruvananthapuram	SPHL Thiruvananthapuram
Alappuzha	NIV Alappuzha	NIV Alappuzha
Kottayam	GMC Kottayam	GMC Kottayam
Idukki	IUCBR Kottayam	IUCBR Kottayam
Ernakulam	GMC Ernakulam	GMC Ernakulam
Thrissur	GMC Thrissur	GMC Thrissur
Palakkad	GMC Thrissur	GMC Thrissur
Malappuram	GMC Manjeri	GMC Manjeri
Kozhikode	GMC Kozhikode	GMC Kozhikode
Wayanad	GMC Kozhikode	GMC Kozhikode
Kannur	GMC Kannur & MCC Thalasseri	MCC Thalasseri
Kasaragod	CUK Kasaragod	CUK Kasaragod